THE

PALESTINE EXPLORATION FUND.

PREFACE.

IN beginning a new volume of our *Quarterly Statement*, we are anxious to ask our Subscribers to bear in mind, that we are still far from being assured as to the stability of our position. We have purposely asked for a very small sum annually, only £5,000 for the next five years or so. That amount will enable us to carry out all our objects. We require £800 a year for home expenses, of which about £400 is wanted for management, the other half being spent in publishing, illustrating, and distributing our Reports. In other words, we can do all our work on eight per cent. of the income we ask. But it must be remembered that we have never received anything like this income.

We have two main lines of work, the survey of Palestine and the examination of Jerusalem. The former has been conducted during the last year with as much vigour as was possible. More than a thousand square miles have been plotted, and when we can send out two more men to help, it will go on with double the expedition. It has been decided to open a special fund for Jerusalem purposes, to which subscriptions are invited. A donation of £50 for this purpose has been recently given by Mr. Tyssen Amhurst, and another of the same amount for the Survey.

If any additional motive were wanted to urge on the work, it would be found in the despatch of the American Expedition. The two great branches of the English-speaking race are now working side by side. The leader of the American Expedition is an officer

of the United States Engineer Corps, Lieutenant Steever. He is accompanied by Professor Paine, as archæologist, and by Mr. Vandyke, jun., of Beyrout. At Beyrout itself are the head-quarters of the Executive Committee of the American Association, composed of the United States Consul-General, the Rev. Dr. Thompson, and the Rev. Dr. Stewart Dodge. As has been stated before, their work will be east of the Jordan over a district comparatively unexplored, and where, doubtless, there will be made discoveries of the deepest interest. There may even be more Moabite stones. We do not *expect*, but we *hope*.

The letters and reports of Mr. Conder and Mr. Drake require no explanation. They are, and will henceforth be, accompanied by a map to show the progress made and the position of the Surveyors. With regard to the tracings already sent home, they are in the office of the Fund, and can be seen by any visitor. They cannot be published until a complete "sheet" has been received. This may not be for more than a year, as the work is spread over a great many sheets, but does not yet cover one single one. We have been kindly promised another meteorological report from Mr. Glaisher for our April *Quarterly*. This will also contain, besides the usual reports, a paper on Mount Gerizim by Captain Wilson. Other papers of interest will appear in the course of the year.

We commend our recently published little book, "Our Work in Palestine," to our Subscribers. It is written with a view to explaining not only what the work has been, but the reasons for it and its aims. We are happy to say that so far its success has been undoubted. Within three weeks after its first appearance we were enabled to order the fourth thousand to be printed, an edition having been simultaneously published by Messrs. Scribner, Welford, and Co., of New York. A very low price has been put upon the book, in order to bring it within reach of all. Considerable corrections have been made in the fourth thousand.

THE SURVEY OF PALESTINE.

LIEUT. CLAUDE R. CONDER'S REPORTS.

VII.

The Plain of Esdraelon.

Jenin Camp, 21*st Sept.*, 1872.

A critical epoch in the Survey of Palestine has just terminated in a most satisfactory manner, in the connection of the triangulation extended from the first base line at Jaffa with the second base line just measured on the Plain of Esdraelon.

According to our calculation, which is not of course so minute as that to be made in England, there is only a difference of about ·03 per cent. of its length of four and a half miles between the base as *calculated* from the triangulation, and the base as *measured* on the Plain. This may be considered as extraordinarily accurate when the difficulties encountered are considered, for the triangulation has now been carried through a strip of country averaging some ten to twelve miles in width and for a distance of sixty-five English miles, in addition to which it must be remembered that cairns have occasionally been destroyed by the natives, the observations being thus rendered less reliable, and that the flickering of the mirage during the day in summer has made it difficult to see an object distinctly at a distance of eight or nine miles in the hills and even of three or four on the plains. The extremely difficult nature of part of the country has of course delayed the progress, but not interfered with the accuracy, of the work.

The total extent of country at present completed is 750 square miles, and upwards of 130 square miles will be added in another week, as the triangulation from the present camp is finished and only the detail remains to be filled in. This is a more rapid progress than was expected, and our arrival at Jenin was a fortnight earlier than had been calculated.

The new base line lies within four degrees of north and south, and is approximately four and a half miles in length over the flattest part of the great plain. Its ends are marked, in a most durable fashion, by cairns of stone set in a sort of mortar of fresh-slaked lime. The southern end has a roughly circular platform of large blocks and of some 3ft. in height and 9ft. diameter, filled in with smaller stones, and the top levelled and covered with lime to form a firm basis for the theodolite, between the legs of which a small conical cairn was placed.

At the northern end, in the middle of a ploughed field of loose heavy volcanic soil, it was more difficult to find materials close at hand. A large mound, some 8ft. high, was therefore made of earth round a fixed centre, and faced with stone well covered with lime. Before observing from this point, which was the last to be used, the mound was partially levelled, and a platform so made round the centre. The theodolite was then placed over the centre, and the mound will be rebuilt as before.

The base was measured from north to south and from south to north, and was further checked by observations from its ends and from a point near its centre. The triangulation will be extended from it northwards, and a good line, some fifteen miles in length, is obtained at once nearly at right angles to the centre of the base.

Such is the present satisfactory state of the Survey, which is now only in want of the additional men asked for from England to reach the required rate of progress.

The amount of archæological discovery between this camp and Nablus has been very small, the few ruins, such as the church and columns at Samaria, being already known, and excavation would not bring to light anything of value.

Near Sanur, however (the ancient Bethulia of the book of Judith, as some suppose), a ruin of some interest was found, and a sketch is forwarded. An isolated hill or tell called Tell Khaiber rises on the south-east of the Merj el Ghurruk, or "drowned meadow," a large marsh formed by the water from the surrounding ravines, and without any outlet. In winter it has some 4ft. of water on the average, but is dry in summer. Sanur is situate on the edge.

On this "tell" are the ruins of a small fort and of a considerable town, but the latter are quite indistinguishable, and only in parts indicated by the colour of the soil.

The fort is roughly some 50ft. square, and two or three courses of masonry, about four feet thick, consisting of ashlar of tolerable size, and set in good mortar, remain. On some few stones there is the appearance of a marginal draft, and over the entrance, which was on the south side, was a flat lintel. The proportions of the stones are not, however, so unequal, in comparison of their length and height, as in the megalithic work of the Haram.

There are further traces around the fort of an external wall with a postern, and of several buildings of moderate size but almost undistinguishable form. Two cisterns, lined with very hard cement, one of which is of considerable size, also appear farther down the hill, and the grey soil, which indicates the former existence of buildings, appears on every side of the "tell."

Local tradition makes this the palace of a Jewish king whose daughter had her summer residence in the marsh. Perhaps a clever theorist may connect this account with the history of Judith, Bethulia being so close to Tell Khaiber.

The great plain, on the edge of which we are now encamped, is of great interest from a historical and from a geological point of view.

Historically it has been called the "battlefield of Palestine," and here, be it remembered, the "battleof Megiddo" (it is supposed) will close the list of contests in the Holy Land.

Whatever may be said of the future, the history of the past does not, however, bear out this assertion. The great battles of Joshua were fought far to the south. The victories of David were on or near to the plains of Philistia. The invasions of the Syrians were directed against the country round Samaria, and the battle of Hattin, which decided the fate of Christian supremity in Palestine, was fought out farther north.

Only five contests are chronicled as occurring on the Plain of Esdraelon: the defeat of Sisera, the victory of Gideon over the Midianites, and the overthrow of Saul on Gilboa, and of Josiah at Megiddo in Bible history; lastly, in more modern times, Napoleon's so-called battle of Mount Tabor.

A brief glance at these battles confirms, however, the opinion that the plain is not, as its appearance on the map would lead one to suppose, specially fitted for the deployment of large numbers of troops or for the successful use of cavalry. The scene of each battle was near the same site, and for this there must, of course, have been a reason. The method and tactics employed by the Jews resembled those of the old mediæval wars of position, as is abundantly manifested in the accounts in the Bible. Each army encamped over against the enemy on a hill or on rising ground with a valley between, and thus the attacking force, unless its leader had advanced views on the use of stratagem and the secret of turning a flank, was inevitably at a disadvantage, and for the same reason a broad plain not offering such advantages was never chosen as the site of a battle.

In the first instance the camp of Barak was on Tabor, and Sisera advanced against him from the Kishon and the Maritime Plain. The counter attack against the heavy chariots labouring through the volcanic mud, which, at a time when the Kishon was full of water from the storm, must have covered the plain, secured for the discomfited Canaanites a defeat more disastrous than would have been expected in an open country, such as that on the north-west of the Plain. In the subsequent contest between Gideon and the Midianites, this open country seems to have been avoided; the camp of the former was on the high ground near Jesreel, whilst the invading bands, like the modern Bedouins, had crossed the Jordan, and advancing up the broad valley (W. Jalud) to the foot of the hill Moreh (the modern Jebel ed Dâhy, or, as it is often called, Little Hermon) had camped securely in the low ground and spread for plunder of the harvest and of all the possessions of the Israelites "as grasshoppers for multitude." The attack from the high ground on this occasion, accompanied by a strata-

gem, was again successful, and the pursuit was towards the east and across the Jordan.

The third battle was, however, by far the most important of the three. The Philistines, under Achish, king of Gath, in Philistia, are here found in the northern plains, and it is possible that the name Wady Jalud, or the valley of Goliath, may still be a mark of their wide dispersion in Palestine. Their camp was at Shunem (the modern Sulem), once more on the slope of the Hill of Moreh, and Saul, as did Gideon, chose the neighbourhood of Jesreel for his head-quarters, and his line of retreat along the high ground of the chain of Mount Gilboa, and to the hills south of the plain. Considering the relative position of the enemy, we see that Saul's expedition to the cavern at Endor, situate north of the Philistine camp, must have entailed a circuitous and lengthy expedition in order to turn their flank on the west and gain the opposite side of the hill, whilst the peril of thus placing their whole army between himself and his camp was also very great. The following day brought his entire defeat; and when we observe that the flight lay along the hills of Gilboa, it seems evident that the main attack must have been not from the north, where the valley is deepest, but on the west, the left flank of Saul's army, where the plain rises into the eminence on which Jesreel (the modern Zerin) stands.

The last battle is of more modern times, for of the defeat of Josiah in the valley of Megiddo there is no reason to speak here. Kleber, with a corps of only 1,500 men, was brought to bay at Fuleh, a little village on the west slope of Jebel ed Dâhy, by the whole Syrian army of 25,000. From sunrise to mid-day they held their position against these overwhelming odds, but a single shot from Napoleon's relieving force of 600 men caused a panic and a flight, in which many Syrians were drowned in the Kishon, then inundating part of the plain.

In each of these accounts we recognise the same peculiarity. In the three later the site chosen was almost the same, and the so-called battle-field of Palestine seems even in those battles fought in its immediate vicinity to have been avoided, the camps being posted on the hill-sides to the east or north-east. The reason is evident; for laying aside the fact that the Jews were never a cavalry nation, the plain itself, covered with a crumbling soil, over which native horses advance with difficulty in summer, and which in winter presents a series of impassable marshes, could never have been considered a good field for the use of this arm.

The geological view of the subject is intimately connected with the historical, and, indeed, in the study of a new country there is no science so generally useful as geology. Not only does the character of the district, its vegetation, its fauna, its scenery, its cultivation, and even the style of towns and villages, differ with slight geological changes, but its history, its civilisation, and more especially its military history, depend to a very great extent on its geology. Thus when we

observe the camps at Shunem or at Jesreel, we find them to have been placed on the firm ground and gentle slopes given where the limestone is on the surface, whilst the flight of the defeated Sisera is across the volcanic mud which covers the plain.

The formation of this great plain, as well as of the smaller ones in its vicinity, is due partly to volcanic action and partly to that of denudation.

A thick bedded white limestone, containing large discs of flint, and gradually merging into the marl of Nablus above, and into a compacter and more thinly bedded soft limestone beneath, originally covered the country from Samaria to Nazareth. Though hard externally, when exposed to the air, this stone is internally as soft as the softest "kakouli." But beneath lay the truly hard dolomitic limestone, such as previously described at Neby Belan.

The present character was given to the country first by a number of eruptions of basalt which occurred in at least three distinct outbursts. One formed the cone of Jebel ed Dâhy, the so-called Little Hermon; a second appears as a distinct upheaval of the strata, from beneath which the basalt has flowed down the side of Jebel Abu Madawar (part of the Gilboa range on the south-east of the plain). The third, and by far the most extensive, is on the west, where on Jebel Sheikh Iskander, one of the highest hills of the neighbourhood, eruptive basalt and stratified volcanic mud are found near the summit on the east, and two isolated cones of basalt on the west, in continuation of the ridge. The Neocomian and other strata are here found to be greatly contorted, but the general dip is upwards from the south-west of the outburst, showing the contortion to be due to this eruption.

The character of the basalt differs considerably. At Jebel ed Dâhy it is black, hard, and compact, with a large amount of iron. At Zerin it is of similar character, but covered so thickly with white lichen as to be hardly distinguishable at first from limestone. On Mount Gilboa, where a regular dyke can be traced below the main outburst, it is of looser consistency, in some specimens more resembling volcanic scoriæ, with less iron and large crystals or distinct agglomerations of augite. On Jebel Sheikh Iskander, again, it is soft and crumbling, in many parts reduced to *débris*, and here volcanic mud is also found.

On observing the lowest strata naturally nearest to the basalt, they are found similar to the hard dolomitic beds of Neby Belan, which also are visible at the bottom of the deepest wadys west of Jeba and north of Mount Ebal. They are the most contorted, and have the greatest dip of all the beds, from which it may be concluded that even before this upheaval they were not conformable with the upper beds. They are hard, compact, worn into caverns by water or gaseous action, and extremely crystalline. From these characteristics, and from their proximity to the basalt, it seems undoubted that they are metamorphic in character (a fact not, as far as I am aware, before noticed), and hence we may conclude that throughout Palestine, wherever they crop out,

the basalt, or some species of Trappean rock, is not far from the surface. The extent of volcanic action must therefore be greater than is generally supposed in Palestine, a theory maintained by Mr. Drake, whose discovery of an outburst as far south as Jerusalem is most valuable in its support.

The action of denudation was also concerned in the formation of the great plain. The strata being thus broken and tilted in every direction, the harder formations were raised on each side, and the softer being worn gradually away between them, were overlaid with a soil consisting of the *débris* of the basalt. Hence we have at last the present surface, a broad plain with rich soil, and surrounded with limestone and basaltic hills, presenting sudden and precipitous cliffs, as above Zerin and below Nazareth, while on the tops of the hills only the original soft chalky limestone remains on the east and on the west alike.

With such variety of geological formation some variety in scenery might also be expected, and is found to exist. The soft white limestone gives low hills, on which the olives flourish, and caper and other shrubs abound. Near to the springs, which are not, however, numerous, gardens with figs and pomegranates also are found. The villages are larger and more wealthy than in the hill-country of Judæa, and perched on the hillside, or on isolated hillocks in the plains. Numerous gay butterflies of European and African species, including the copper (four or five species, some similar to the English), and one or two of the genus *vanessa*, but more of smaller size, belong to this scenery; the cicala and mole cricket evidently alternate in the olives by day and by night; the species of lizards are large and powerful, and dark grey, as a rule, in colour, and the chameleon is not seldom found. Wild animals are few in these cultivated districts, and the birds principally of the smaller genera, though vultures, eagles, harriers, and hawks are commonly seen.

The scenery of the great plain itself is, however, of a different type. The long flat expanse is divided into patches, which, viewed from the summit of Jebel Dâhy, seem with the roads to radiate from the villages on the low knolls of limestone rising out of it. These consist of fields of Indian corn, of simsim or sesame, of corn, and occasionally of cotton. Fallow land in dark brown strips intervenes. Near Jenin and Sileh (villages on the border) a few palms give a truly oriental character to the scenery, springing round the minaret of the mosque, and hedges of prickly pear surround many of the villages. The animal life also differs slightly in character. Huge locusts, and species of *truscalis* (the bald locust of Scripture), are occasionally seen; and of the smaller species, with red, white, yellow, blue, and green wings, swarms may be disturbed at every step, reminding one of the appropriateness of the simile, "like grasshoppers for multitude." Several species of the praying mantis, with the abdomen curled curiously upwards, are also common. The lizards are of small species, and agree in colour with the brown soil. The birds most common are the swifts and swallows, with the

ever-present birds of prey. The howling of jackals, the groups of gazelles, and the wild boar coming to the water at sunset, are all more ordinary sights and sounds than in the hills.

The hard crystalline rock of the lowest formation gives yet another type of scenery, barren and desolate as can be imagined; the hills are tame in outline, with deep narrow ravines intersecting them. Nothing but a few thorny shrubs and dry grass seems to grow on them, and the attempts at cultivation, unlike the laboriously intricate terraces of the softer soil, are few and meagre. Here on the tops of the hills the magnificent genus *Papilio* is found alone; other insects are more rare; and wild animals, including the jackal and the gazelle, abound. Coveys of partridges (*Caccabis saxatilis*) are numerous, but very wild.

This scenery is again modified, where the basaltic *débris* forms a soil, as at Sheikh Iskander. Here the hill-sides are densely covered with shrubs and trees, which would be large were it not for the destructive habits of the natives, who for the sake of the firewood burn or cut out half of the trunk and three-quarters of the branches. The principal species are the *Quercus cocifera* and another oak, the arbutus in shrubs, and the carouba. In many parts the bushes are almost impassable and of considerable height, presenting a refreshing contrast to the dull parched grey of the olives, and of the limestone in the more open country. It is in country like this that the leopard, the cheetah, the wild boar, and other game are found on the range of Carmel; and the ever-present birds of prey here find a more numerous quarry.

A good deal that is new might yet be said with regard to modern Palestine, considered from a pictorial point of view. Were it possible to bring a man of good artistic taste into the country, ignorant of its past associations, and of all that has been written on the subject, there can be little doubt that his descriptions would be new, and very astonishing to many; probably quite as much so to the class of writers who can see nothing to admire in Palestine, as to the author who describes the "ice-clad peaks of Hermon."

Grandeur of form we may look for in vain, and except in such scenes as that of the great plain as seen from above Nazareth, the extensive views are rarely striking. Barren hills, dry gullies, tame and commonplace outlines abound; but the charm of a vivid oriental colouring still remains to please an artist's eye. The rich hues at sunset, the peculiar tints of some of the limestone hills—such as Mount Ebal—which reflect the blue of the sky, the occasional afternoon effects with long-drawn shadows, and of brilliant contrasts of light and dark on a cloudy day, would, if caught and treasured, lead any one inspecting a series of such sketches (from which the *commonplace*, as in other countries, had been banished) to believe in Palestine as a very picturesque country.

Nor must the appearance of the inhabitants — their dark skins,

bright eyes, white teeth, and wonderful taste in the combination of the brightest colours, be forgotten. Nothing more picturesque than a road, the women in their red veils and long-pointed sleeves carrying water; the dark camel-drivers, in black head-dresses, and striped brown-and-white abbas, riding on diminutive donkeys before the train of clumsy, swinging, dull-coloured camels; the rich sheikh, in a purple jacket, scarlet boots, a thin white cloak, and a yellow head-dress, his grey mare with a scarlet saddle, and long brown tassels at its shoulders, alternating with the herds of black goats and diminutive red oxen, could be desired.

In Jerusalem itself this colouring is not less marked. The costumes are far more varied, and the colours gayer, whilst the effects in the surrounding country are equally brilliant at times. The pink light on the sides of the Kedron valley, the rich ochre colour of the Haram walls, the dark grey of the city fortifications, are all points on which an artist would look with pleasure. But above all, the interior of parts of the Haram, its dusty soil covered in spring with flowers, and its dark cypresses round its richly-coloured mosque, are especially impressive. Nor is the gloom of the interior, through which the elaborate mosaic arabesques, the gilded inscriptions, and capitals, and painted woodwork, and glorious glass windows gradually come out as the eye grows accustomed to the sudden change from the glare without, less fine; while the gaily-dressed processions, the sombre colouring of the negro inhabitants of the shrine, the flights of pigeons, here finding a sanctuary, lend the finishing touches to a picture which really recalls the idealistic scenes of the "Arabian Nights Tales."

VIII.

Progress of the Survey.

R. E. Camp, Umm el Fahm, *Oct.* 10*th*, 1872.

From the camp of Umm el Fahm, which will to-morrow be broken up, the first thousand miles of survey have been completed in close upon a year of unintermittent work, including the satisfactory measurement of two base lines, the completion of a long narrow strip of triangulation, which, in spite of the awkwardness of its shape, necessitated by other than strictly survey considerations, has been kept correctly in place as regards its longitude, and finally the completion of the detail and of a great part of the hill shading.

My first report on this subject was dated the 18th of July, when 560 square miles were completed. Thus in the last three months 440 square miles, or ·44 of the whole amount, were executed. Thus, though the rate had till July been gradually increased, it has been still more so since that time, a fact due in great part to the increased facility of travelling in the country last traversed, which has allowed of the use of larger triangles, and of the more rapid execution of the detail. Of

the correctness of the work my seventh report gave satisfactory proofs; and of its execution the Subscribers to the Fund will be able to judge by the tracing sent home in July, which will, no doubt, be soon published and circulated.

The country surrounding our present camp is unusually picturesque, and but little known to travellers, as it is out of the ordinary direct route.

Immediately in front of us, on the south, is the volcanic summit of Sheikh Iskander, a point conspicuous on all sides from a great distance, forming the boundary of the view northward from the Jeba range of hills, and rising above all the surrounding country, as viewed from any part of the plain.

As before noticed, the hard dolomitic limestone is here tilted up in every direction towards the summit of the hill, and the upper strata are worn away from over it by denudation. The slopes are covered with the thick shrubs and underwood which extend southward to the small plain east of that of Esdraelon, known as the Merj Arrabeh, and the same kind of country extends westward, where, however, oaks of considerable size, with a species of hawthorn and an occasional terebinth, make the scenery still more varied in character.

The great Wady Arah, which runs westward, just north of Umm el Fahm, makes a sudden division between this district and a second extending along the west side of the plain to Carmel, apparently a dry desert, though in reality it is all arable land, watered, as is the Sheikh Iskander district, by numerous springs and deep wells. The geological formation is the hard chalk containing flint bands, which has been before noticed, and beneath, as visible on the sides of the deepest wadies, is the soft white marl or chalk first noticed near Nablus. Thus the succession of the strata, as observed here, is identical with that noted at Jifna by Captain Wilson, and except in places where the last named formation seems to thin out, these three successive kinds of limestone are continually recurring.

The appearance of the country to the north of the camp is gradually modified westward, where a white dusty soil is dotted over with clumps of oak (ballut) spreading over the gently undulating slopes, and presenting what would be park-like scenery, were it not for the absence of grass, which in summer is replaced by corn, the whole ground being arable. Two or three beds of winter streams are crowded with shrubs, and beneath one of the volcanic "tells" or mounds of Sheikh Iskander flows even at this, the driest season of the year, a stream, though but of inconsiderable amount. Round its bed brambles and young willow plants flourish, and the course of a second and larger stream near Lejjun is marked by the bushes of epilobium and large plants of a kind of mint, as well as fennel brambles and smaller plants.

The volcanic "tells" require particular notice, as their discovery shows the centre of irruption at Sheikh Iskander to have been even larger than at first supposed. Farther north, at Lejjun and in its

vicinity, these outbreaks again occur, as well as near Endor, on the north side of Little Hermon, thus carrying out more completely the theory of the formation of the great plain, as noted in Report No. 7. On Sheikh Iskander there are two of importance, one near the main outburst of basalt on the hill, in which a sort of volcanic mud has lifted the top strata of the limestone and poured out at the side of the mound so formed, and a second where a sharp cone of the same substance, in layers of various colour, is capped with limestone. The character of the mud in the first, when minutely examined, resembles a disintegrated basalt; in the second, which is to the west, near the Ain Sheryyeh, blocks of hard, dark, compact, ferruginous basalt are embedded in some parts, and fragments of limestone in others; whilst beneath, separated by a thin band of limestone, the basalt appears as a rock in the sides of a small precipitous gully, to a depth of twenty to thirty feet. Here, as a native states, a Frenchman from Damascus pitched his tent, and extracted copper from the mud. There is, however, no appearance of either a lode or of nodules, as far as careful observation could show.

The "tell" near Lejjun (the site of the famous Megiddo) is still more curious. It consists of hard basalt, and though of considerable height, it does not appear in any way to have affected the limestone strata, which are nearly horizontal, the formation being the hard chalk, which is not changed or metamorphosed in any degree.

Several of the views in this country are more picturesque than any we have yet come across in Palestine. Thus, in early morning, from the top of the hill the eye wanders over the broken outline of the hills south of the great plain, backed by the long veil of transjordanic mountains, and over the long extent of the plain itself: a scene which, with the dim shadowy effect of sloping light, must be allowed to be beautiful by even the least prejudiced in favour of Palestine scenery.

Looking again northward, a similar scene, taking in the volcanic peaks of the Hauran and the huge blunt-pointed Hermon in dim distance, with the Nazareth range, the shapeless outline of Tabor, and the Little Hermon's conical summit, the great plain again stretching below, all towards the foreground, presents a striking distant effect as viewed in evening light and shadow.

The archæological notes collected since I last wrote are not numerous.

The supposed temple at Abu Amr has been noticed by Mr. Drake in his last report. I send drawings of the details, a small plan, and a sketch, showing the present strata of the ruin. The floor is a couple of feet below the general level of the rubbish, so that possibly excavation might bring some inscription connected with the edifice to light; but some time would be required to investigate the place properly.

The details are pretty well preserved, and are of a debased style of art, resembling some of the first century work at Jerusalem.

Besides this, and the discovery of a ruined khan, and of a building apparently of large extent, and probably, from a capital and other indi-

cations, originally Roman, the plan being now entirely lost, nothing of any importance has been noted.

In fact, nothing is more surprising, and especially in the part of the country at present being surveyed, than what may be briefly described as the "ruins of ruins" continually met with in every direction.

IX.

Explorations in Jerusalem.

R. E. Camp, Umm el Fahm, *Oct. 15th*, 1872.

Another visit to Jerusalem became necessary for the arrangement of survey stores, &c., and the following notes are the results of a sort of reconnaissance carried on in my leisure time during a week spent there.

By far the most interesting objects of study is the gradually increasing collection of Moabitic earthenware of Mr. Shapira. The prejudice at first felt in England—though not in Jerusalem—with regard to these unique specimens of ancient symbolical art, has prevented my sending any remarks on this subject to the Committee, though such sketches as Mr. Drake and I had time to make, which fairly represent the character of the collection, have been forwarded from time to time. Now, however, the late visit of Pastor Weser and of M. Dinsberg (a German resident at Jerusalem) has placed the authenticity of the pottery beyond dispute, and a short abstract of the results of this journey may prove interesting. It is compiled from the notes taken from the various accounts of Pastor Weser, Mr. Dinsberg, and Mr. Shapirà himself.

It appears that of this pottery smaller fragments had been previously known, and camel-loads sent by the Arabs to Damascus, where it was used for the manufacture of cement for cisterns. More perfect specimens were found at Dhiban by Bedouins in purchase of saltpetre for their gunpowder. The pottery is often so strongly impregnated with this salt, that though washed again and again, a constant efflorescence reappears in a few hours. It was then that Mr. Shapira commenced collecting through an Arab emissary; but after some four months he determined, with the other two gentlemen above mentioned, to endeavour personally to find specimens *in situ*.

The party proceeded first on a visit to Sheikh 'Ali Diab, the famous Chief of the 'Adwan, who had before been Mr. Shapira's guest in Jerusalem, and through whom many specimens had been obtained. Great difficulties were experienced in the supply of water; horses often had to be sent back four hours' distance to drink; and later the excited bearing of the Hamydeh brought the expedition to a rapid termination.

Leaving Diab's camp, the party proceeded to El 'Aab, the Elealeh of Scripture (Numb. xxxii. 7, 37; Isaiah xv. 4), and here they found a rock-cut repository some two feet deep, and long enough for two jars,

such as were sent from this spot by Sheikh 'Ali. Thence they proceeded to Hesban, which is distant about half an hour's ride, and famous for its beautiful water; but here they found nothing except some old coins, one Roman, another ancient Arabic, and one possibly Hebrew, together with broken pottery and four stones inscribed, but utterly illegible. The next point was the Camp of Fendi el Faïz, Sheikh of the Beni Sakhkhr, to whom the Hameydeh are subject, situate near Bir el Seïn (?), and from thence they proceeded to Madeba.

It was here that Pastor Weser and Mr. Dinsberg themselves found the curious pieces, of which I send separate sketches. Under a heap of more modern broken pottery two pieces were first found, on one of which a Phœnician "mem," on the other two lines of crowded Phœnician characters, were legible. Digging to some twenty-three feet, the other specimens were discovered at various depths by the two above-named explorers, Mr. Shapira himself entertaining the natives at the tent with coffee. Here, also, and at other places, men, women, and children, both boys and girls, brought numerous broken pieces; for prudential reasons they were not bought, but often thrown away in presence of the natives to prevent their getting an exaggerated notion of the value of the pottery. The ignorance of the inhabitants of the country was so great, that they mistook rocks with natural marks for inscribed stones. Pottery also was unknown, as water is kept in goat-skins only.

Diban was next visited, and the two travellers were shown by the sheikh of a small tribe the niche in which the large figure of an Astarte (?) had previously been found, and which appeared just fitted to hold it. They were of opinion that the statue was interred here, though possibly *beneath* a temple. Lying on the hill above the cave was a stone some two feet long, with a few Phœnician characters. Broken stones were also found here, and pieces, said by the natives to belong to the famous Moabite stone, were seen, as well as pieces of later date; one with a Cufic inscription, another two with engraved crosses separated by a geometrical pattern. A stone had also been found at Madeba, a hard granite block, having in its centre a representation of the sun, and on either side a moon, and beyond a star surrounded with five moons. This was possibly *in situ* in a wall of large stones.

The last ruin was Umm el Rasas, visited simply to investigate the so-called serpent stone, of which Mr. Shapira had a copy—a block of about thirty inches side, with a bilingual inscription and the figures apparently of a scorpion and a serpent. Unfortunately their intention was known to the Hameydeh, and on arriving at the place pointed out no stone was found; but surrounding stones had been disturbed, and there was evidence of a large body having been moved. Crossing accidentally the very line along which the stone had been taken, similar traces were visible at intervals of fifty to a hundred yards, and, finally, a cistern with indications, as though a heavy body had been thrown into it. Descending, it was found filled with stones, but time and the temper of the people would not allow of a minute investigation of the spot.

From thirty to forty pieces, some of which I have sketched, were brought by Sheikh Diab, as well as a fine pot, with an extremely bold inscription in plain Phœnician characters, found at Khirbet Jemil (?), near Umm el Rasas. Its translation will be interesting, as there seems a possibility of its being a votive sentence regarding the ashes of the dead. It was closed at the top, and has seven apertures, through which the ashes may have been inserted.

The expedition now returned to Zamát and Hesban, after a visit of eleven days to the country. It is to be regretted that it became necessary to undertake it, as the chance of obtaining any further specimens on reasonable terms is materially damaged. The country of the Hameydeh is now impassable, and it is with great difficulty that a further collection is being amassed. A figure even larger than the Astarte, with characters on its back and chest, in an extremely fragile condition, will, it is hoped, be got safely to Jerusalem ; and if the suggestion of the use of water-glass, which we recommended to Mr. Shapira, be adopted, some of the most perishable pieces may still be preserved.

The character of the pieces found by Pastor Weser will be found to agree with former specimens drawn and sent to England, especially the Astarte with the horned head-dress, the points placed downwards, like the present coiffure of the Arab women, which is often ornamented with coins. In the later specimens one figure with horns, and curious cup-shaped protuberances instead of breasts, is no doubt a representation of the same deity mentioned previously in my first report (Letter II.) on this subject.

One great characteristic of this pottery is its fragile condition. When taken from the soil (like other antiquities found in Italy) it is fresh-looking and apparently new, but as soon as exposed to the air it will in some instances fall to pieces at once, in others it gradually becomes crusted with saltpetre as before described. Even the pieces which appear most perfectly preserved are liable to break suddenly without warning. The pottery, which at first seemed of two kinds, now proves to differ in various specimens from a soft disintegrated grey earthenware to a bright red, apparently of later date, several intermediate kinds being observable.

With regard to the character of the objects themselves, setting aside the question of inscriptions, which should not be discussed except by competent authorities, the symbolism presents many interesting features. Part is undoubtedly connected with the ancient idolatry, so often referred to in Scripture, in "the abominations" of the Moabites, in the mistranslated "grove" of the temple of Samaria, and in many different superstitious rites, including the worship of Baal Peor ; whose name is preserved at the modern Tel Fa'ur, where many specimens were found belonging to this form of symbolism. The mystic number seven is continually represented on the figures, and in some cases fourteen or twenty-one round holes are arranged on one

piece. A head which I have just sent has six teeth and one opening into the nose; another has five dots, and one on each breast; a third has four vertically and three horizontally arranged; a fourth has fourteen marks representing perhaps a beard, five teeth, and two nostrils.

The triangle is also, but more rarely, found in one piece (a disc); it occurs as a reverse to the seven circular dots. The representation of the sun is also not unfrequent, one figure having sun and moon attached to its sides instead of hands (perhaps a rude symbolism of the work of Providence employing the influence of the heavenly bodies).

One most curious point is the apparent element of caricature in the heads—grinning mouths (in one case the tongue protruded), enormous noses, horrid heads, and deep-set eyes. Some resemble apes, others are seemingly bird-headed. Horns and huge ears, distinct from the crescent of the Astarte, with its horns depressed, are not uncommon. One head I now send resembles a mediæval gargoyle, other specimens are seemingly Egyptian in character.

The whole collection now numbers more then seven hundred pieces, of which we have drawn some two hundred of the most perfect and characteristic, including the calf, the so-called Astarte, the bull's head, and other fine specimens. The camel, the lizard, the serpent, the tortoise, and, it is thought by some, the leopard (Mr. Drake suggests the otter), are all roughly represented, and birds and bird-like figures of various kinds. I may remark that on inspection of the sketches two ways of representing the eye will be observed, with other characteristic points of more or less critical interest.

Some notes from the Talmud, communicated to me by an educated rabbi, may be of interest in connection with this pottery. A broken piece of an idol, a stump, or head, was not to be regarded, says the Mishna, as an idol in itself; thus it might be put to a useful purpose, if of metal melted down, if of pottery broken up and used again. This was not the case with a hand or a foot, which were in themselves objects of worship, and if found were not to be touched, but to be regarded as unclean. A curious relic of this hand-worship* is, I am informed, still preserved in Jerusalem, a rough representation of a hand being always marked on the wall of every house whilst in building by

* The handprint on the wall is commonly used by the Jews to avert the evil eye; care is taken to put it in a conspicuous place outside the house before a marriage, birth, or other festival. At Jerusalem a sign resembling a double arrow-head is frequently used instead, which has been explained to me by a Jew as symbolising the five names of God, as do the five fingers, thus averting evil from the place where it is imprinted. In the ruins of El Barid, near Petra, Professor Palmer and I found a cistern whose cornice was decorated with hand-prints alternately black and red. At the present day both Moslems, Christians, and Jews hang hands, rudely cut out of a thin plate, of silver or gold, round the necks of their children to preserve them from the evil eye. The use of the first and last finger of the hand, for the same purpose in Italy, is well known,

the native masons: several unbroken specimens of hands are found in Mr. Shapira's collection. Again, with regard to the calf, which we naturally connect in our minds with Aaron's golden calf, great doubt has been felt whether the latter was an imitation of the Egyptian Apis, or a representation of the Cherubim. Now in the Mishna the Sar Apis is mentioned as an idol; the Babylon Talmud in criticising this goes into an elaborate explanation, connecting the word with the Patriarch Joseph by some extraordinary perversion, in apparent ignorance of the simpler explanation, "the Ox Apis," which is furnished by modern Hebrew scholars.

The examination of Mr. Shapira's collection having been perfected up to date, my attention was next turned to the existing archæological remains above the surface in Jerusalem. In a former letter (No. 6) I described the investigation of Siloam, and of the southern side of the city, with remarks on a rock-cut corner in tank No. 24, and a description of the curious Kalaat Jalud already explored by Captain Wilson. Accompanied by Dr. Chaplin I now endeavoured to examine thoroughly the north of the city, and to carry out some investigations of importance in the Haram. The results were interesting, and in one instance new; and the whole city being in these two visits pretty thoroughly examined above ground, it becomes now possible to give a definite plan of action as regards the continuation of Captain Warren's explorations in Jerusalem.

First in interest comes the Haram, especially the Platform and the Mosque itself. Much still remains to be done here, and new details may continually be observed. Thus in the diagram I send you showing the level of the rock at various places on or near the platform, some points occur not shown on Captain Warren's plan.

Within the mosque, my attention was first turned to the sacred rock itself, and I have executed a compass sketch of it, on a large scale, which contains several details which may or may not be of importance, but which are not in the plans either of Captain Wilson or of Count de Vogüé, such as the *two* drains leading to the shaft on the north side. Had it been morning instead of afternoon we might have ventured to get on to the rock, but as many fanatical pilgrims were being shown round the sacred places by the sheikh's son, I judged it safer to take measurements by offsets from the outside.

Next to the rock, the pillars of the mosque require special notice, their character being almost unknown in England. I will send sketches of all; twelve in the inner circle, supporting the drum, and twelve in the outer, surmounted by architrave blocks, between which runs the well-known wooden architrave or beam. These should be of interest, as the only correct representation of any of them is one by Count de Vogüé; but this is not, as has generally been supposed, the type of

but this verges on the use of the horn or horn-shaped article, such as a horse-shoe or a charm. Horns are still in common use amongst Mohammedans, who hang them up in fruit-trees to ensure a good crop.—C. F. T. D.

the whole number, which, it will be observed, differ greatly in outline, size, proportion, and details. Of the inner circle only two are alike; the rest seem to have been brought from various older buildings, and possibly may not be of the same date, though this is a question for architects to decide, if, as I hope, my sketches are sufficiently characteristic to enable them to do so.

Of the outer row, one peculiarity is that none of the pillars have bases, but are surrounded by a sort of pedestal made of blocks of marble built up against the shafts, which are not all of equal height, so that to make up the level above the architrave blocks of two of the pillars are only half the height of those of the remainder. Eight of these pillars resemble that drawn by M. de Vogüé, the remainder differ, as shown in the sketches. The bosses in the centre of the capital are of various devices, some pillars have four different kinds on four sides. All of these, except such as are entirely defaced, I have drawn, including that on which a cross is considered to be represented, which is by no means so clearly visible as one would be led to expect by the former representation.

With regard to these capitals, which are generally described as Romanesque in character, it may further be remarked that similar ones are built up into the piers on the east entrance to the platform, and that two, seemingly of the same date, appear in the arcade of the steps opposite the "Gate of the Chain" in company with a Byzantine basket-work capital of perhaps the tenth century work.

It would be most desirable to obtain a perfect collection of capitals from the Kubbet es Sakrah, the platform, the Mosque el Aksa, and the present church of the Holy Sepulchre, as a good deal of valuable architectural criticism might be based on such a comparison. Our information at present is by no means so perfect as it may easily become on this subject.

Of visits to the royal caverns, the tombs of the kings, the grotto of Jeremiah, and other well known localities, there is no reason to speak here, as only places not sufficiently noticed or newly discovered will be of any great interest; these include the wall and ruins east of the Holy Sepulchre, the new explorations in the Muristan, the remains north of the city, and a newly discovered tomb.

The ruins east of the Holy Sepulchre were first examined by Count de Vogüé, who describes them in his book on the "Temple of Jerusalem." They are two in number, and differ entirely in character.

The first is a wall which is undoubtedly composed of masonry of a period identical with that of the Jews' wailing place. The height of some of these magnificent stones, in the part of the wall running north and south, is forty-two inches, and their other two measurements in some cases the same; the ruin seems to have formed originally the south-west corner of some building, and afterwards to have been used in the construction of the church which stood at one time on this spot; the wall was then faced on the west side with smaller stones, without any

marginal draft. Captain Wilson here sunk three shafts, and found beneath the pavement, east of the wall, large ashlar work, not drafted, the lower course at a depth of 7′ 4″ being underpinned with smaller stones. This is not by any means a proof that the stones were not *in situ*, as there seems reason to conclude from various ancient relics in Jerusalem, that this may have been an old method of forming a foundation. The second ruin, that of an arch of Christian period, supported on two capitals, one called Corinthian, the other Byzantine, is also noticed by both M. de Vogüé and Captain Wilson. There can be no doubt that this capital, as well as a second, apparently *in situ*, in a wall adjoining the arch which has been roughly built on to it, belong to an older building. It has, however, been supposed that the two Corinthian capitals are a pair, and I have, therefore, thought it worth while to send sketches and dimensions, showing that though possibly belonging to the same building they differ in size and in detail.

I should also be glad to have an architect's opinion on their date, as the introduction of the winged birds with heads (apparently) worked into the central device, seems hardly an ordinary element of Roman detail. Symbolical figures, the centaur, the gryphon, representing, according to Dante, the church of Christ, and many other allegorical devices, were commonly used by Christian architects, as in the capitals discovered by the Rev. T. Neil, in El Aksa, and in the slab over the south doorway of the Holy Sepulchre.

If I might be permitted to hazard a conjecture on such a subject, I would suggest that possibly the capitals might belong to the palace of Helena, Queen of Adiabene, which, we are told, stood in the centre of the lower city in the time of Josephus.

Close to this spot, in the Muristan, the excavations are being rapidly pushed, and will probably be complete in a year; several very large cisterns, lined with hard cement, have just been found. They are beneath the arcades shown on the plan just published in the last Quarterly, and near the Street of David; the rock here has been sought in vain at a depth of forty feet. I hope, nevertheless, soon to be able to send home a series of rock soundings from the Holy Sepulchre eastward, showing the slope of the valley. The method of raising water seems to have been by means of a large wheel, a space about a foot wide being left between two ribs of the vaulting to allow of its revolving.

There is no point as to which we have so many important indications, both in the archæological literature of Jerusalem and in existing remains, as the extent and direction of the northern wall built by Herod Agrippa, commonly called the third wall by Josephus. It is fortunate that this is the case, because there is also no part of the city in which there seems less probability of our recovering many more remains. The ground has for eighteen centuries been ploughed and reploughed, and in other parts the rock itself appears on the surface, more especially on the north-west; thus of foundations or even displaced

blocks of the ancient masonry there is very little chance of our now finding any remains.

Still, it is to be observed that the most has not been made of the information we possess.

The Vandalism of the fellahin is rapidly destroying the few remains which yet exist. Close to the north road the great stones in the side of a cistern where Captain Wilson's second excavation was carried out, are still intact, but those marked "old foundations" to the west of these on the ordnance survey, have entirely disappeared, having been cut up for building stone by the natives. The production of the line from these eastward, cuts those first mentioned, and thus gives approximately the line of a quarter of the whole extent of the wall. The foundations of two towers, and parts of a wall, first noticed by Robinson, are now covered up under the Russian buildings, but his bearings and measurements enable us yet to lay down the course of the third wall on the west. Thus it is only on the east where the description of Josephus (*Wars* 5. 4) and the conformation of the ground alike point out clearly its course, that any room exists for doubt with regard to the line taken by this the latest of the gigantic fortifications of ancient Jerusalem.

One confirmation of the supposed line exists, which has not hitherto been made of sufficient importance, namely, the true position of Scopus, which, we learn from two passages in Josephus, was seven furlongs from the city. In comparing the three principal passages where the word occurs (*Ant.* 11, 8, *Wars* 2, 19, *Wars* 5, 2), no reasonable doubt can be left in the mind as to the true position of the site. The place called Sapha, or prospect, the elevation called Scopus, or watchtower, and the plain from which the city, and especially the temple, were first seen on advancing from the north, all alike point to one site. From the ridge Alexander could see from far off the white robed priests, who, with a great multitude in the plain behind, came out along the north road to meet him as he advanced from that side. Here Cestius camped, advancing by the same route from Galilee, and Scopus was then (the wall of Agrippa being already built) seven furlongs from the city. Finally, it was here that the 10th and 15th legions, numbering at least 30,000 fighting men, made their camps, which, when camp followers, horses, mules, camels, and baggage are taken into consideration, must have covered at least 30 to 40 acres. Behind them, three furlongs further north, the fifth legion made its camp also on some suitable bit of ground situate near the course of the north road—an indication which, like the rest, agrees only with one site north of the city.

Now with these data in his head the traveller who, like myself, spurs up the last ridge which separates him from Jerusalem, sees sloping beneath him, east of the great north road, a plateau, which is separated by a broad valley from the town. From this ridge the dark grey wall first becomes visible, and of the Haram and of the great dome within it "a plain view might be taken." Hence this place may, to use the

words of Josephus once more, be "very properly called scopus (or prospect), and is no more than seven furlongs from the city," that is, from the remains in the cistern already noticed, as measured on the ground by Dr. Chaplin. Still further, here, and here alone, on the north, we have the natural site for a camp, protected in front by the valley, and only approachable from the east, where its front was again covered, if, as in the case of Titus, the attacking force held the northern part of the Mount of Olives. Thus it may be said that Scopus and the third wall mutually fix one another's positions; and the indications, coupled with the existence of remains on the spot, form the most satisfactory identification perhaps possible of any site near the city.

In close connection with this question comes that of the whereabouts of Helena's monument. It has been identified with the so-called tombs of the kings by Robinson, but although the position is a possible one, and the passage in Jerome (*ad Eustach. epitaph. Paulæ*) showing it to be east of the great north road, with the mention of its rolling door in Pausanias (*Græciæ Descript.* lib. viii. c. 16)—a peculiarity not known in any tomb other than the tombs of the kings at Jerusalem—alike confirm the opinion; still the author dismisses the notice given by Josephus of its distance from the city wall rather too hastily, by the remark that, though it is four furlongs from the Damascus gate, still the old wall extended about a furlong further north, thus giving the three furlongs of his authority (*Ant.* xx. 4). The truth is that the distance from the monument to the old foundations in the cistern is about two furlongs, but Josephus' words are, that it was "*no further* than three furlongs," a loose expression, which is not of itself sufficient to upset the identification. When to these indications we add that given in *Wars* 5. 2, where we learn that the Jews, sallying from the gate between the women's towers, by which the north road entered the city, pursued Titus, whom they had nearly intercepted on his leaving this road to reconnoitre westwards towards Psephinus, and continued to harass him with darts as far as Helena's monument, it becomes clear that the great sepulchre close to the north road, but east of it, with a rolling stone to close its entrance, commonly called the Tombs of the Kings, is in reality the mausoleum of the royal family of Adiabene. Its stelæ, or pyramids, have indeed disappeared, though objects of enthusiastic admiration to ancient writers, but the debased though rich ornamentation of its façade, generally allowed to be first century work, agrees well with the history of its erection by the sons of Queen Helena.

Such are the main points observable in the question of the main wall. Psephinus must have long ago disappeared, as a glance will show beneath the road bounding the Russian property; the "tower of the corner," the "monument of the fuller," alike give no indications above ground; and the sepulchral caverns of the kings, unless, as I think not quite impossible, they were really one and the same with the tomb of the royal family of Adiabene (a solution which would at once answer

the ever-recurring question, What kings were they?), must, it seems, remain a puzzle for ever.

The investigation of this quarter of the city brought to light a new discovery, that of a tomb which is at least as old as the Roman period, and probably older, situate close to the ancient remains in the cistern, excavation No. 2 of Captain Wilson. The owner of the olive-yard on this spot has commenced the excavation, and possibly found relics other than those which were left as worthless at the time of our inspection, although he has announced that he is willing to allow of our digging to uncover the remainder. Referring to the plan, it will be seen that a rock-cut scarp faces westward, along which a trench has been dug, discovering two finished and one unfinished tomb cut in the soft rock. These contain loculi parallel to the length of the excavation, and two north and south; at the eastern end above, a groove is cut in each side of the tomb, into which the slabs of stone in the sketch were fitted, thus making a second tier for a loculus, sarcophagus, or funeral vase. There appear to be other chambers on the north and south sides not yet examined. Part of the structure on the north was originally, or by later conversion, a cistern, and plaster is also found on the south, but in neither case is it very hard. The section shows where a tesselated pavement, with traces of a pattern, exists under the rubbish above the tomb. Into the second of the tombs at present opened a shaft leads from the ground above. Remains of the present pavement were visible further east, as shown on the plan.

The loculi were full of bones and of powdered bone-dust. These appear, according to Dr. Chaplin's opinion, to be very ancient, having lost all traces of animal matter; and to have belonged to a race of small men. Some fragments of thin, ancient glass, a green glass bead, of form unknown at the present day, chips of pottery, not of modern manufacture, and a small coin, almost entirely effaced, but having a device, seemingly of two figures, or possibly ears of wheat, were obtained in the tomb and in the heap of bones excavated from it.

That this was originally a place of sepulture is clear; but what the tesselated pavement above, and remains of what seems to have been a wall, can be, it is difficult to decide. Curiously enough, we have no reason to expect the existence of any important edifice in this quarter of the city; it is without the ancient third wall, and yet there seems a probability of its being a place of some interest and extent.

X.

Rock-cut Tombs.

Nazareth, *Nov. 24th.*

Survey.—The Survey has during the last five weeks been carried on in the neighbourhood of Nazareth, and on the north side of the great plain; this part we have been anxious to finish before the arrival of the rainy season, which will effectually prevent out-of-door work during part of December, January, and February.

The style of country is much more favourable to rapid and correct survey, and the length of the lines in the triangulation is on the average double that obtained in the hills. The total extent of country finished is now over 1,100 square miles, the first rains and various other causes having delayed the work during the course of last month. The extreme clearness of the air has been very favourable to the observation of long lines, and those taken from the point at Nebi Dâhy were particularly successful, including one to Mount Ebal, a distance of twenty-five miles.

The most important feature of the work is the exact determination of the watershed of the plain, which has never before been quite perfectly laid down, and which forms a very tortuous line along the high ground from Zerain to Nebi Dâhy, and to the Nazareth hills.

A day has been devoted to the tracing of the great aqueduct north of Nazareth, and a plan and section of the reservoirs connected with it have been made to the scale of 1 chain (66 ft.) to the inch.

These details are, I think, the only ones likely to be of interest to subscribers generally, the purely technical points being reserved as not necessary in a report of this kind.

Archæology.—The country just entered is far richer in objects of archæological interest than that south of the plain, and amongst these the rock-cut tombs form a principal group.

The interest of such remains is very great, for two reasons: first, because we can be tolerably certain that they belong to ancient times; secondly, because the existence of every such cemetery points to the probable existence of a town or village of the same date somewhere in the immediate vicinity. Thus the antiquity of a site may be verified by the discovery of tombs in the neighbourhood. That no such excavations are made at present is well known, and it is a curious feature of the country that whilst at some former time the inhabitants must have been almost a nation of troglodytes, whole hillsides being burrowed with caves often still inhabited, cisterns, granaries, and tombs, yet none of the present natives have any notion of mining or hewing in the rock.

Three principal classes of tombs are observed in the plain and in the hill country about Nazareth, each class including several varieties. The first consists of roughly excavated caves, the second of tombs sunk in the surface of the rock and covered with a stone, the third of chambers entered at one end with loculi in the sides.

The first class is exemplified at Jeba, at Khirbet Khazneh (in the plain), at Iksal (near Nazareth), and at El Jireh, on the hill above Iksal. It seems to have been used where the limestone is very soft, and the more carefully worked sepulchres of the other classes are generally cut in much harder rock. The Jeba tomb has a square antechamber carefully plastered, with a structural arch over the door leading to the cave within. This is far rougher, cut in a sort of cheese-like marl, with a loculus scooped in each side. A second cave to the west of Jeba is even rougher, and may probably be also a tomb, as it is regarded

as a sacred place by the Mohammedans. Khirbet Khazneh is a ruin on the east of the plain not far from Lejjun, where traces of a large building, a broken sarcophagus, a capital, a shaft, and a small Roman altar, were found on the surface, whilst beneath, a cave with four loculi roughly semicircular is excavated in soft limestone. There appear to be at least two more connected with it, but their passages were filled with rubbish, as were also the front entrances.

The cave at Iksal is the most interesting of this class, and differs from any as yet found. A large chamber, the roof of which had fallen in, was first found, with four loculi parallel to its sides, and raised above the floor about 2ft. 6in. Two niches for lamps or tablets were cut in the sides, and on the south side was a small opening through which I succeeded in scrambling into a cave with rough-cut loculi on two sides. The rock here also was soft, and much chalky *débris* had fallen on the floor. There were many bones strewed over the floor, which from their brittleness and general appearance may probably be very old; and in one loculus I was fortunate enough to discover a skull almost perfect to the orbits (the face having disappeared), and near it a jaw-bone, probably belonging to the same skeleton. A very narrow passage led out of this cave, but was too small to allow of my creeping far into it. It appeared to come to an end, and may only have been a loculus, but of this I cannot be certain.

Amongst the tombs at El Jireh are two which may rank in the first class, being also caves cut in soft stone and entered by rough and narrow passages.

The second class is extensively represented at Iksal, where close to the cave is a cemetery of perhaps over two hundred tombs. Near Seffuriych, and at El Jireh, other examples have also been measured.

The Iksal tombs include several varieties, single loculi sunk in the stone, rock-cut sarcophagi, tombs with a single side loculus, and tombs with two. Most of them had water-channels to conduct the rain, and some raised edges. All appear to have been closed by heavy roughly squared blocks of stone from 7ft. to 8ft. in length. There was no appearance of any special direction chosen for the body to lie in, and here, as in the other groups, the tombs faced in all directions. Seemingly more attention had been paid to the direction the water would take in running over the surface of the rock in which they were sunk, than to any other consideration. For this reason they are never used at present, as the native Mohammedans bury east and west, with the face turned south towards Mecca.

In one of these tombs two skulls were found, one very large and perfect, the other small and possibly female. The arrangement of double loculi is supposed, I am told, to be Christian, and to be intended for the reception of the bodies of a man and his wife. I do not, however, think these skeletons can have been those of the original occupants, for they appear to be more modern, and rags of clothing were mingled with the bones, the greater number in each skeleton still remaining in

something like relative position. The natives call these the "Frank tombs;" possibly they may be of crusading times.

Seffuriyeh, the Sephoris of Josephus, gives signs of having been a flourishing town in Roman times, and would merit a more complete exploration than we can manage to give to it this year. A great number of sarcophagi lie round the village, or are built into the old crusading castle, and in all that I have observed the end where the head was laid is rounded.

Near Seffuriyeh are three small sunken tombs or loculi, also with the head rounded, and closed not with a square block, but with one cut into the ordinary triangular cross section of a sarcophagus lid. Thus these tombs, though belonging to the second great class, are probably earlier than those at the Iksal cemetery.

Two tombs of the second class, sunk in the surface of the rock and closed above by large stones, are found amongst those at El Jireh. The first has four loculi on the four sides of the quadrangular sunken chamber, but they are far rougher than those at Iksal, which have semicircular arches, and a partition separating the body from the chamber. The second has three loculi, and at one of its ends a small passage into a quadrangular chamber cut in soft rock without loculi, a curious combination of the arrangements of a sunken tomb with one entered on the level of the floor.

The last class of tombs is exemplified at El Jireh, at Nazareth, and near Kefr Minda. It appears, however, to be far less common than the other two, and these are the first examples we have found. The chamber is entered at one end, and the loculi placed with their length in each case perpendicular to the side of the chamber. The El Jireh tomb is partly fallen in, but seems to have been roughly circular in plan, with seven of these loculi radiating, and an entrance of some size. The tomb at Nazareth is cut in rather soft rock, its roof, unlike most of the tombs as yet found, is a kind of tunnel vault, and the loculi, of which there are twelve (five on each side, and two at the end opposite the door), have a similar tunnelled roof. A second close by, said to contain ten loculi, with two more outside the door cut in the sides of the passage before the chamber, was filled up and unapproachable.

Another tomb not as yet measured, but resembling those at Nazareth, was found on the summit of the high hill above the village of Kefr Minda, the most northern of our trigonometric stations, and situate within that portion of the country which was reconnoitred by Captain Anderson during the preliminary expedition under Captain Wilson. This hill is visible from points near Tiberias, from Safed, Acca, Haiffa, Carmel, and Nazareth, and would be a most valuable point but for the thick ring of oak-trees springing from the ruins of some ancient building beneath which the tomb was cut in the rock.

Large numbers of cisterns occur amongst the tombs found in the cemeteries at Iksal, and in the hill close to Tell el Jireh.

Geology.—The observations systematically continued of the strata

north of the plain fully confirm the deductions which I made in Report No. VII. No less than twenty-nine distinct outbursts of Trappean rock, on the east, west, and north of the plain, are now marked on my rough map. Some of these have broken through the upper strata without disturbing their dip, possibly emerging through some natural fissure; others have, as at Sheikh Iskander, uptilted the lowest beds and flowed from beneath; and wherever the formation of the crystalline dolomitic limestone appears on the surface, there seems reason to suspect the existence of basalt immediately below. The reason for the dip of the Nazareth range, which is upwards towards the south-south-east, is given by a basaltic outbreak near the village of Tinjár, and another in the plain itself, showing the origin of this great break in the mountain system to be principally volcanic.

Of the Trappean rock there are now three varieties noticed: the black basalt of greater or less hardness, and containing generally a large amount of iron; the soft mud, apparently of basaltic *débris*, and often containing pieces of limestone, such as that noticed at Sheikh Iskander; and finally, a grey stone, containing large crystals (of vitreous lustre, presumably of augite), and resembling syenite. This is probably the coarser kind of basalt known as dolerite, and was first observed on Little Hermon (Nebi Dâhy).

The succession of four systems of strata first observed by Captain Wilson at Jifna, I have found to hold good throughout that part now mapped, but it is often very difficult to distinguish between the hard chalk with flint bands and the soft white chalk beneath, as first seen at Nablous. The upper beds are very thickly stratified, and seem to become softer where farther from the surface or less exposed. Sometimes they seem to overlie immediately the hard dolomitic stone, but in other places the interposition of the soft chalk is well marked, though apparently corresponding in dip and strike. Hence it seems probable, either that the two formations are of the same date, or that the soft chalk "thins out," to use a technical term, in some parts of the country.

The valley of the Kishon and the great upheaval (to use the old nomenclature) of Carmel, promise to be of some geological interest. I hope here to be able to make a good geological section from the Mediterranean to the Jordan, which may perhaps be useful in determining the question of the formation of the "ghor" valley. Above the dolomitic limestone on Carmel, a formation resembling the Santa Croce marble occurs, in which the first fossils (excepting nummulites at Nablous) we have yet found appeared. They were shells of *Lamelli-branchiata*, probably, as far as I can judge, of the genus *Gryphæa*. Shells were here found, I believe, by Dr. Tristram, but of what genus I do not yet know. Interstratified with these beds, a kind of rag or shelly limestone of loose consistency and brown colour was found by the German colonists at the foot of the mountain, and has been found useful and ornamental in the construction of their neat and comfortable houses.

Natural History.—The time of year is not now very favourable for entomology, the butterflies are disappearing, and the locusts and mantisses seem half numbed by rain and reduction of the temperature. Large numbers of blackbeetles were, however, together with all species of ants, very active after the first rains, and colonies of winged ants were, till quite lately, setting out on their travels.

The collection of *Lepidoptera* now includes some hundred specimens of six out of the seven great families of butterflies, nearly twenty-four species in all. The *Argynnidæ* or *Fritillaries* are, however, conspicuous by their absence. The English Red Admiral has only just appeared, whether from the butterfly emerging later in the season from its chrysalis, or because it does not exist farther south, it is impossible as yet to say. Several other species of this family are common, but this particular one seems to be rare.

Of further notes we have made few. A large adder some three feet long was found at the entrance of a tomb which we were about to enter in the dark.

Amongst birds the pied wagtail, the yellow wagtail, and the robin, closely resembling our English species, appeared after the first rains.

The atmospheric effects of this time of year add a wonderful colour and shadow to the scenery. The great clearness of the air seems to reduce distance by nearly one-half, and the sharp outlines and deep blue shadows of the hills; the orange sunsets, with really purple colouring in the distant ranges; the fine banks of clouds of every colour and form; the passing storms with bright sunlight beyond; the Safed mountains with summits veiled in thick piles of cumulus; the Sea of Galilee, reflecting the surrounding hills; the Mediterranean, bright blue, with the gloomy ridge of Carmel to the south of the bay; finally, the great brown plain with white smoke wreaths from the burning weeds,—all these scenes, and many more, furnish subjects in which any artist would rejoice.

Not less charming are the various costumes, which seem peculiar to Nazareth itself. The short abba and gorgeous "kafeyeh" of the men, the white "Izar," the silk dresses, the broad scarves, and many-coloured trousers (red, green, blue, and yellow) of the women, give a crowd a peculiarly picturesque appearance, and differ materially from the sordid dresses of the poorer southern villages.

Several meteorological phenomena of interest have been noted, including broad bands of blue at sunset extending from the zenith to the horizon east and west, a meteor seen by Dr. Varten illuminating the tops of the hills and travelling slowly, a very bright halo round the moon, and several very fine rainbows.

In conclusion, our thanks are due to Mr. Zeller for his kind interest in our work, and his care to ensure our seeing and exploring all that existed in the neighbourhood.

MR. TYRWHITT DRAKE'S REPORTS.

X.

Camp, Umm el Fahm, *Oct.*, 1872.

On the 28th ult. we moved camp from Jenín to this place. The heat in the plain of Esdraelon had been very great. On the 27th the thermometer stood at 107 degs. in the tent, and 103·5 degs. in the Observatory. Notwithstanding this, the result of the month's work since leaving Jeb'a is most satisfactory. A base line of four and a half miles in length was laid down, measured and checked; several cairns were, as usual, put up and observed from, and a total of 145 square miles were sketched in. Though part of this lay on the plain, the greatly increased rate of progress will be seen by a comparison with the amount of country sketched in per month when we first began: this seldom averaged more than sixty square miles. The non-commissioned officers were then, however, unused to the hard riding, and new to the country and its ways. Now, notwithstanding the great heat, the rate of work is more than twice as rapid as it was seven months ago, and I feel sure, at the same time, that its accuracy is in no wise interfered with. I am glad to be able to report also that no member of the party, either European or native, has hitherto been laid up with sickness. With the exception of a few trifling ailments of two or three days' duration, our state of health has been all that could be desired.

The village beside which we are now camped is a large one, and divided into four quarters, El Jebarín, El Mahamín, El Majáhineh, and El Akbaríyeh, each of which has its own sheikh. There are some fifteen houses of Christians, which represent a total of about eighty souls. These are mostly birds of passage, who "squat" wherever, and as long as, they find it convenient, and then flit "to fresh fields and pastures new." The natives are an unruly lot, who never paid taxes till within the last few years, and who have not yet learnt the lesson of subjection. Some days ago a man tried to seize my horse's bridle as I was passing near a threshing-floor, and insolently told me to be off, at the same time making as though he would strike me; but, seeing then that he had gone rather too far, took to his heels and fled. After a suspense of three or four days, I consented, at the intercession of two of the sheikhs, the kadi, and other village worthies, not to have the man imprisoned at Jenín, so he was brought and solemnly beaten before my tent door by the sheikh of his quarter. As civility in this country is induced by fear and a sense of inferiority, we shall probably be treated with decent respect for some little time to come. One cause of the villagers' unruliness is their wealth: they possess large herds of cattle and flocks of goats, a very considerable number of horses, and more

than the normal quantity of camels and donkeys. Their land comprises a wide tract of thicket (called *Umm el Khattaf*, "Mother of the Ravisher," from the dense growth which, as it were, seizes and holds those who try to pass through it) to the south and east, arable hills to the west, and virtually as much of the rich plain of Esdraelon (Merj ibn 'Amir) as they choose to cultivate. Besides all this, the village owns some twenty or more springs, under whose immediate influence orange and lemon trees flourish. Shaddocks grow to an enormous size; I have one now in the tent whose circumference lengthwise is 2ft. 6½in., and its girth 2ft. 3½in.; weight, about eight or nine pounds; and tomatoes, cucumbers, and other thirsty vegetables flourish. The taxes paid by the village amount to 23,000 piasters, or £185 sterling, in addition to the poll-tax on sheep, goats, and cattle, which probably comes to £20 more.

Under and immediately to the east of Umm el Fahm is the great volcanic upheaval which I mentioned in my last report as existing beneath the tomb of Sheikh Iskander. In addition to the basalt, which is mostly friable, stratified volcanic clay and mud are found in large quantities, of a yellow, red, or greenish colour, though the prevailing tint is a dusky brown. This is usually overlaid by a stratum of limestone more or less hard; that at the sides of the upheaval is distinctly metamorphic, and lower down is hard and crystalline.

On crossing Wady 'Ar'a—which, rising above Lejjun, flows in a south-westerly direction to the sea—a curious change is observable. All wild vegetation ceases, except a few thistles and plants of fennel, while the rock changes to chalky limestone at top, mixed with a few flints, and hard clay beneath, which is here used for keeping the roofs watertight. On the western side of this formation, which is closely furrowed with wadies, where it begins to sink into the Maritime Plain, lies an open woodland consisting entirely of *ballût* (*Quercus Ægilops*, locally called *Mallul*), which here grows into trees some thirty to thirty-five feet high and six to ten feet in circumference. The thickets westward consist chiefly of *sindian* (*Q. pseudo coccifera*), *afs* (*Q. infectoria*, locally *affás*), *sarris* (*Pistachia lentiscus*), *butm* (*P. terebinthus*), *burzeh* (a shrub with leaves very like the *sindian*, and bearing a purple berry the size of a currant); intermingled with these are a few plants of *cistus*, *arbutus andrachne*, and the usual growth of *billan* (*Poterium spinosum*), sweet-leaved vines, &c., in the more open places.

The fauna is scanty: the mammals most common are wild boars, jackals, and wolves. A few leopards are said to exist, but are more frequently found on Carmel; ichneumons are very common, badgers less so. A species of wild cat—captured near Nazareth—has been described to me by Mr. Zeller as very like the booted cat (*Felis chaus*), but without the black feet. The lynx (*F. caracal*) also exists, but owing to its very shy habits is rarely seen.

The scarcity of birds in these thickets has most surprised me; the dense growth of brushwood is just the shelter which many of the

warblers most affect, but I have been able to detect very few taking advantage of it. I have noticed a few Montagues harriers, and a peregrine falcon. Black-headed jays, the Athene owl, and kestrels are as common as usual.

The season of gathering the olives has just commenced, and the women, boys, and girls are all busy thrashing the trees with long poles and gathering up the fruit, which is just beginning to turn black. The other day a boy was killed by falling from a high branch. A litter was hastily improvised with a cloak and a couple of poles, the corpse was carried off, and, after the fashion of the country, buried instanter. The yield of olives this year is exceedingly good, as is that of all the crops except the cotton and millet. The *si'sim* (sesame), which is exported to Marseilles for the purpose of being converted into "superfine olive oil," has been most abundant, and the tax collectors, local governors, and even the fellahín, will benefit from this year of plenty.

The woodlands which I have mentioned are a most pleasing relief to the eye after the bare grey rocks, varied only by patches of grey-foliaged olives, and vaulted with a glaring grey sky, like molten lead, to which we have been so long accustomed. Our first shower of rain fell on the evening of the 3rd, and though it only amounted to ·005 in., the air was somewhat cooled, and the 5th was one of those wonderfully clear days, so rare in northern latitudes, which lend a charm even to the most monotonous stretch of round-topped hills. From our stations near here, Jaffa, Carmel, Jebel Sunnin (in the Libanus), Mount Hermon, the range of Jebel el Durúz, Hauran (with its prominent volcanic cones), and block of Jebel Ajlún (Gilead), were all distinctly seen.

The tomb of Weli Iskander, which stands near here, has proved a most valuable trigonometrical station. This personage is, on the authority of the Kadi, one of the kings of the Children of Israel, but I cannot find any foundation for this legend in history, unless it be some memory of Alexander, son of Herod, who was strangled at Sebaste, but buried at Alexandrium (Jos. B. J. 1 xxvii. 6). Others say that it is a *makam* in honour of Alexander the Great, of whom Moslem legends, with their usual disregard for chronology, tell marvellous tales. He was a negro, the son of El Dhab'aak, king of Himyar, and a Greek princess, and is called *Iskander Zul Karnayn*, "Alexander with the two horns," which grew like a ram's from his temples. To conceal them he invented the turban; he also invented the fashion of shaking hands. He had an interview with Abraham in Wady Seb'a (Beersheba) B.C. 300; his conquests extended over the world, and amongst other notables he slew Yajuj and Majuj (Gog and Magog), who were each 240 feet high; and to avoid the plague which would ensue from the putrefaction of such a mass of flesh, he caused an army of birds of prey to tear off their flesh and carry it to the sea. These giants were omnivorous; they ate trees, crops, men, horses, and cattle, and were able to drink the Lake of Tiberias dry in a single day. Some of their race, who were also

cannibals, rode ants as large as camels instead of horses. Alexander was a fit hero to cope with such monsters, as his nose was three spans long and, of course, the rest of his body in proportion. Og, the king of Bashan, to reach whose knee Moses, who was twenty cubits high, took an axe twenty cubits long and leapt up twenty cubits from the earth, must doubtless have been a connection of these giants.

In several places among the brushwood we have observed square towers measuring twelve to fifteen feet on each side, and built of roughly-hewn stones two to four feet long. These, together with huge built-up cairns, and the rock-hewn wine and oil presses, are doubtless of remote antiquity.

In one ruin—Khirbet Abu 'Amir—near Kefr Kûd, we found the ruins of a building. It is probably a small temple, and there are appearances as though it were *in antis*. The stones are too much scattered and decayed for satisfactory examination. Lieutenant Conder and myself have made sketches of the ornamentation, which is much overcrowded on the cornices. All around are ruins of houses and traces of a road up to them, on which are strewn the voussoirs of a circular arch with plain mouldings. The usual rock-hewn cisterns exist, but lined with a very hard pinkish cement. This colour arises from the finely coloured pottery mixed with the lime.

Near by is a pit hewn in the soft rock, in which I was told water still collects and remains, even in the summer, after abundant rains. Beside it are some fine ballût trees, and a solid platform 35ft. by 30ft. of large roughly-hewn stones. The object of this erection is not evident; whether sacrificial or merely an oil-press is impossible to say. The tomb of Sheikh Selámeh now stands upon it.

THE COMPARATIVE CHRONOLOGY OF PALESTINE, EGYPT, AND ASSYRIA.

By Francis Roubiliac Conder, C.E.

Not a little disquiet has been awakened in the minds of many estimable persons by the statement that the results of recent decipherments of the hieroglyphical inscriptions of Egypt, of the cuneiform records of Assyria and of Persia, and of the Phœnician tablets of Palestine, are irreconcilable with a belief in the uncorrupted accuracy, or even the original authenticity, of the historic books of the Hebrew Scriptures.

It is of no little importance to arrive at the truth in this matter. On the one hand, writers may be named who eagerly seize the occasion to impugn much to which a high degree of unquestioned veneration has long been accorded. On the other hand, the patient, unrewarded, unappreciated labours of the students of long-forgotten tongues are

discouraged and disparaged, from the fear of their questionable tendency.

The first step which intelligent criticism should take in the matter, is to draw a sharp line between the province of science and that of opinion. How much do we take from definite historic data? How much from authority? Whose is that authority? and on what is it based? The witnesses must be brought impartially into court before any jury can decide whether their testimony is contradictory or the reverse.

Accounts of the same events, emanating from opposite sources, may be compared in two distinct respects. We have to regard their historic form, and their chronological indications. In the former we must expect contradiction; opposing nations or parties invariably give contradictory accounts of the same events. Even in the late Franco-Prussian war it has often been almost impossible to believe that the French and the Prussian dispatches described one and the same action. Thus if we have an Egyptian, an Assyrian, or a Moabite account of any event described by a Hebrew historian, it is certain, *à priori*, that the colouring of the two records will be entirely reversed.

With regard to chronological indications, the case is altogether different. Within certain limits accordance must here exist, or error, in one account at least, is proved. These limits are not wide, but they must not be neglected. One chief source of variance is the differing date of the commencement of the year among different nations; or even in the same nation for different purposes, or at different periods of their history. Thus the Jews had their sacred, and their civil, year; respectively commencing with the new moon of the vernal, and of the autumnal, equinox. The Greeks commenced their years with the summer solstice. The first of Thoth, the commencement of the Egyptian year, receded by a day every four years, in consequence of the use of a solar year without intercalation. Again in reckoning by regnal years parts may be taken for units. A history of England, of which the chronology was taken from the dates of Acts of Parliament, would differ considerably from astronomical truth.

On the other hand, every great people of antiquity had certain cycles, or secular reckonings, by the revolution of which the error of various additions were checked. No attempt at defining a complete system of chronology can be of permanent value that will not endure this test. Thus the very vagueness of the Egyptian year, its periodic shifting of place, gives a value to Egyptian dates peculiar to themselves. Thus the Chinese have a cycle of sixty years, extending back to an early historic dawn. The Assyrians had a corresponding cycle—the Sossus. The Jews had one of forty-nine years, which, by its slow gaining on the decennial notation, is of the utmost value to scientific chronology.

All scholars hold that a chronological system is, at least implicitly, included in the Hebrew Scriptures. But the difficulty of clearly

defining that system has proved very great. It has been increased by the fact that the rendering given by the natural custodians of the sacred books, the doctors of the Jewish law, is palpably wrong, within historic times; the accession of Cyrus being post dated by 184 years. The Rabbinical chronology is therefore regarded with well-founded distrust.

Taking, as our APXH, in a purely chronological sense, that commencement of the sacred reckoning to which the unfortunate term *Annus Mundi* has been generally applied, we find a difference of no less than 2,549 years to exist between the dates assigned by learned men for the Christian era. The modern Jewish reckoning gives 3,761 years; Baronius, 3,951; the Greek Church, 5,606; Panvinius, 6,310. Amid all these conflicting theories, that of Usher, which is by no means one of the best supported, has been adopted in the dates printed (when any are printed) in the English Bible. No accord exists between these dates and any ancient cycle whatever.

The point at which the 488 years of the Jewish monarchy have hitherto been connected with profane history is the accession of Nebuchadnezzar. This date is taken by almost all writers from an ancient list of kings called the Regal Canon. It is ascribed to Ptolemy, but there is no proof that it has the high authority of that great astronomer. Many of the dates of the Canon are known to be accurate; some being determined by eclipses mentioned in the Almagest. But the length of the reign of Nabopolassar, the father of Nebuchadnezzar, is made eight years shorter than the time cited by Josephus in his reply to Apion; and that of Nebuchadnezzar himself is made two years shorter than in other accounts.

The dates given by Josephus would, no doubt, be conclusive, but for the palpable corruption of most of the passages to which reference is usually made. As we now find them, his statements are self-contradictory; so that there can be no doubt that they have been altered by copyists. We know, from a sort of preface to an early copy of Eusebius, that at one time it was thought to be the duty of a faithful transcriber to correct any error in the original. Thus, in the most conscientious manner, the present blunders may have originated.

But in passages where an obscure or little understood mark of date is inserted, there is less temptation for the copyist to make any alteration. Thus the period of 414 years from the close of the Regal Government to Antiochus Eupator (Ant. xx. x. 7) is one that conveys no information to any one who is not aware of the dates of the Seleucidæ. It remains, therefore, uncorrupt, and agrees with several other obscure passages in Josephus in fixing 1 Nebuchadnezzar in B.C. 595.

In the second year of Darius, it is said in the first chapter of Zechariah, the indignation against the cities of Judah had lasted for three score and ten years. In the 25th chapter of Jeremiah, v. 11, it is predicted that the nations shall serve the King of Babylon for seventy years. That chapter is dated in the fourth year of Jehoiakim, being the first

year of Nebuchadnezzar, and accords with the date, taken from Egyptian monuments, of the battle of Carchemish and the death of Neco. (The death of Josiah, according to the ordinary chronology, preceded by two years the date of Neco's accession.) Four years after that defeat, according to Josephus (*Ant.* x. vi. 1) King Jehoiakim became tributary to Nebuchadnezzar. The second year of Darius is exactly seventy years from that date.

The rectification of the dates of the Jewish reigns, which is thus demanded, both by the prophetical Hebrew books and by the Egyptian stelæ, brings them into accurate accordance with the Assyrian dates, which are verified by a solar eclipse. We thus find the fourteenth year of Hezekiah to synchronise with the third year of Sennacherib, which it ought to do according to the cuneiform records. Further, the fifteenth year of Hezekiah was, according to the cyclical reckoning, a Sabbatic year. This is in accordance with verse 30 of the 37th chapter of Isaiah. In the fourteenth year of Hezekiah the land was left untilled in consequence of the Assyrian invasion. In the following year the prescribed Sabbatic rest, as to the observance of which full details are given in the treatise Shebith (the fifth of the first order of the Talmud), fell due. In the sixteenth year agriculture was to resume its course. We have thus an exact concurrence of the three distinct reckonings of the Egyptian hieroglyphics, the Assyrian clay tablets, and the predictions and statements of the prophets, with the course of the great undeviating cycle of the Sabbatic year.

Another great element of accuracy in determining Hebrew dates is to be found in the twenty-six years' cycle in which the commencement of the courses of the priests returned to the same point. The Talmud informs us (Taanith, iv. 2) that the entire nation was divided into "mishmaroth," or divisions of orders, corresponding to those of the priests. When it came to the turn of each mishmara to go up to Jerusalem, the priests and Levites belonging to it did so, and the other Israelites of the division assembled in the synagogues to read the first chapter of the Pentateuch. Thus the whole nation had an intimate acquaintance with this revolution of the calendar. We have hence an absolute check of the date of the destruction of the temple by Nebuchadnezzar. Scaliger has preserved an ancient Hebrew verse, embodying the fact that the course of Jehoarib was in function at the time when the Chaldeans burst into the temple.

Die nonâ mensis, horâ vespertini
Quum eram in vigiliâ meâ, vigiliâ Joarib
Introivit hostis, et sacrificia sua
Obtulit: ingressus est in sanctuarium
Injustus Domini.

Jehoarib was in course from 3 to 10 Ab. B.C. 577, in which year those days fell on the Sabbath; thus affording a further, and an astronomical, synchronism.

If the Assyrian statements are read by the light of this determination of date, it will be seen that their accordance with the Hebrew Scriptures is fair and credible. There may arise a question, at times, as to the dynastic or personal name of a king; but careful investigation has removed so many apparent difficulties, that no apprehension need be entertained as to the final establishment of entire accuracy, both of decipherment and of date.

THE HAMATH INSCRIPTIONS.

To the Secretary of the Palestine Exploration Fund.

Dear Sir,—During the three months that have elapsed since I had the pleasure of presenting you with my proposed arrangement of a portion of the Hamath Inscriptions, I have no event to report bearing upon the discovery of fresh matter in this department, unless indeed I be allowed to mention the large door-post, or lintel, from Moab. The authenticity, however, of the latter has been denied in England, so I will merely remark that it is impossible that the Hamath Inscriptions in their proper form can have been known to the supposed forger of the Moab door-post, but that nevertheless about five out of the nineteen characters on that post are identical with the Hamath ones. A small inscription from Aleppo, in your hands, has also been shown me. It reproduces some of our Hamath forms, and throws light upon the proper grouping of one or two compound forms, which I had supposed to be single. No progress at all has been made towards decipherment.

In this second batch which I now forward you, the three first lines are all on the same stone—the first on the north side, the next two on the west side of the No. 4 stone, named by Captain Burton and Mr. Drake. The fourth line I have reproduced from your last journal in smaller size, for purposes of comparison with the new matter. It will be observed that I have made the arrows now point upwards, having, in fact, turned the whole inscription round bottom upwards, without, however, altering the arrangement of the symbols among themselves. My principal reason is, that I take one of the signs to be a palm-tree, whose fruit and foliage I naturally prefer to place upwards. The sign of the human foot is also thus seen to have the sole downwards.

Between the lines where I believe the kings' names to appear, I have written the word king. In the second line where I have written this the symbols are purely Egyptian. In the third line they are only partly Egyptian.

The writing, I presume, should be read from right to left. All the inscriptions together produce about forty-five distinct characters, and, *primâ facie*, such a number would indicate a syllabic alphabet, as in the Cypriote. The stage of syllabism is, of course, less advanced than that

of the consonantal alphabet with independent vowels. If Cyprus took the one and Greece the other from Phœnicia, it is well for the world that Greece should have been unready in the Thothmes age for the less perfect gift.

The state of the stone No. 4 is such that many parts of what I now send are far from trustworthy. I have bestowed a great amount of labour on the comparison of different parts of your squeezes, but am far from satisfied in some parts of the result. I conclude with saying that I see a railway survey is said to be in hand from the coast to the Euphrates, and your journals will, I hope, be forwarded to the officers and men engaged on the work.

Yours very truly,
DUNBAR ISIDORE HEATH.

ESHER, SURREY, *Nov.* 20, 1872.

JERUSALEM.

Mr. Conrad Schick, the Imperial German architect at Jerusalem, who has recently been engaged in making measurements for the construction of models of the Kubbet es Sakhra and Haram es Sherif, for the Turkish Government, has kindly forwarded to the Palestine Exploration Fund plans and sections of certain cisterns and buildings which have not been previously described.

Anything which adds to our knowledge of the "sacred area" cannot fail to be of value, and the following notice of Mr. Schick's discoveries will be of interest to many of the subscribers to the Fund.

1st. At the north-east corner of the platform three rock-hewn cisterns,* not previously visited, have been examined, and plans made of them. Like the well-known "great sea" in the southern portion of the Haram, they are hewn out of the soft "malaki" rock, and the overlying stratum of "missae" has been left to form a roof. The only passages noticed as entering the cisterns were the ducts for leading in the surface drainage. The cisterns are from 28ft. to 45ft. deep, and the natural rock lies close below the surface.

2nd. Mr. Schick has made a minute examination of the eastern side of the platform, and found two closed openings into it, one near the north end, which appears to have been a small door leading to a chamber under the platform, the other south of the steps in front of the Dome of Chain. This, which is almost covered by rubbish, also led to a chamber, and on each side of it is a closed window, 6ft. high and 2ft. 6in. wide. From the steps to the south-east corner, there were at one time buttresses, 1ft. 11in. thick, at intervals of 9ft. 7in. Traces of five still remain, and the position of the others can be seen on a careful examination, though the broken faces of the stones which bonded them to the

* Two of these cisterns are numbered 2 and 34 on the Plan of the Haram, in "Recovery of Jerusalem;" the other Mr. Schick has numbered 35.

wall have been chiselled over. There is also a small cistern, apparently built with masonry, immediately below the south-east corner. The northern opening alluded to by Mr. Schick is probably that of the Cell of Bostam mentioned by Mejr ed Din, who says that the door was closed in his day; and the southern opening is doubtless that of the Cell of Samed, mentioned by the same writer as adjoining the Stairs of Burak. The door of this was also closed.

3rd. At the north-west corner of the platform, Mr. Schick has succeeded in exploring a place which is thus described by Mejr ed Din:—"Below the platform on the west there is a place called Bakh-Bakh (wonderful and beautiful), which is the place of El Khydr: it is now abandoned." This is a small mosque under the platform, 42ft. 6in. long and 23ft. wide, with a *mihrab* at the southern end. The roof is a pointed arch of rough stones, and on the west side are two openings, which appear to have been windows. In front of the mosque are two pillars of red granite, carrying an arch which supports the modern Kubbet el Khydr. The floor of the little chapel, Kubbet el Arwah, is said to be natural rock.

4th. In a small building near the Bab en Nazir, an earthenware pipe was found, bringing water from the north into the building, whence it was distributed to other parts of the Haram by three additional pipes.

5th. Mr. Schick forwards a detailed plan of the ancient remains at the Damascus Gate, and draws attention to the great thickness of the masonry on the left (east) side, in which he thinks there may be a staircase.

6th. Near the site for the new Protestant Church, without the city, four loculi have been discovered sunk into the rock, and covered with flat stone slabs. A steep flight of steps led down to them, and they are covered by a vaulted chamber of masonry.

7th. Some additional excavations were made at the tombs described by Lieut. Conder,* but no results were obtained from them.

8th. Mr. Schick forwards a sketch of the ruins of Seilun (Shiloh), and the plan of a small building known as Jamia ed Daim (Mosque of the Eternal). The interest attaching to Shiloh, as the place in which the ark rested from the latter days of Joshua to the time of Samuel, is so great that a short description of the existing ruins may be acceptable. "Go ye now unto my place which was in Shiloh, where I set my name at the first, and see what I did to it for the wickedness of my people Israel," are the words in which the prophet Jeremiah (Jer. vii. 12) refers to it as a striking example of the Divine indignation.

The ruins of Seilun cover the surface of a "Tell" or mound on a spur which lies between two valleys, that unite about a quarter of a mile above Khan Lubban, and thence run to the sea. The existing remains are those of a *fellahin* village, with a few earlier foundations, possibly of the date of the Crusades. The walls are built with old material, but none

* Page 22.

of the fragments of columns mentioned by some travellers can now be seen. On the summit are a few heavy foundations, perhaps those of a keep, and on the southern side is a building with a heavy sloping buttress. The rock is exposed over nearly the whole surface, so that little can be expected from excavation. Northwards the "Tell" slopes down to a broad shoulder, across which a sort of level court, 77ft. wide and 412ft. long, has been cut. The rock is in places scarped to a height of 5ft., and along the sides are several excavations, and a few small cisterns. The level portion of the rock is covered by a few inches of soil. It is not improbable that the place was thus prepared to receive the tabernacle, which, according to Rabbinical traditions, was "a structure of low stone walls, with the tent drawn over the top." At any rate, there is no other level space on the "Tell" sufficiently large to receive a tent of the dimensions of the tabernacle.

At the southern foot of the "Tell" is a fine spreading tree, and near it the Jamia ed Daim, a building of well-dressed stone, with two aisles. The longest dimension is from east to west, and there is a *mihrab* in the southern side. The building probably dates from a later period than the Crusades. To the south-east is a small reservoir with steps, and beyond this the Jamia el Arbain (Mosque of the Forty), a curious building, which has been noticed by all travellers. It appears originally to have been a mosque, and to have been afterwards converted into a small fortress, heavy buttresses having been built against the walls, closing all the doors except one.*

Between Seilun and Turmus Aya there are distinct traces of an old road, 10ft. wide, running towards Sinjil.

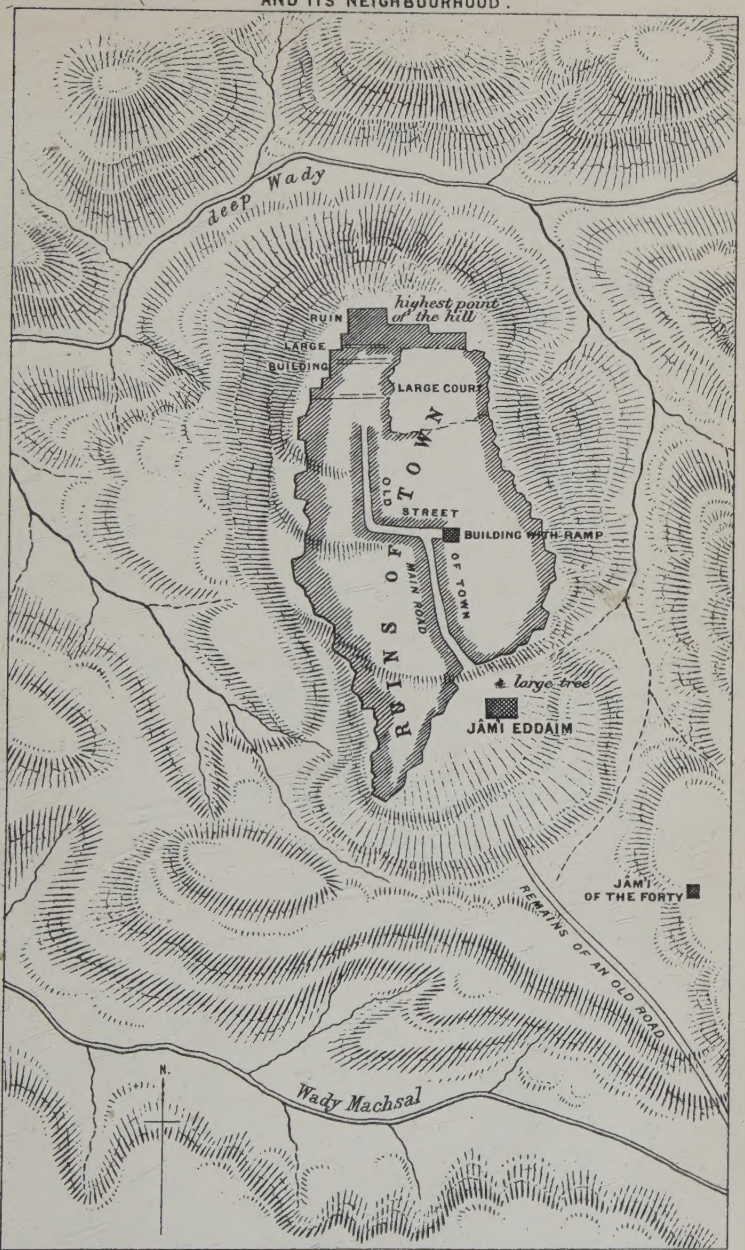
The spring of Seilun is in a small valley which joins the main one a short distance north-east of the ruins. The supply, which is small, after running a few yards through a subterranean channel, was formerly led into a rock-hewn reservoir, but now runs to waste down the valley. There are numerous rock-hewn tombs near Seilun, generally of the same character, a small vestibule, from which a low square door leads into the tomb-chamber. Near the fountain, however, there is a peculiar tomb hewn in a huge fragment of rock. It consists of three loculi, two in the face of the rock and one on the top.†

C. W. W.

* Photo. 99 gives a view of this mosque, and Photo. 100 a general view of the ruins.

† See Photo. 101.

PLAN OF SHILOH (SEILÛN)
AND ITS NEIGHBOURHOOD.



From a Sketch by Mr C. Schick

Stanford's Geog. Estab.t 6 & 7 Charing Cross.

THE CLIMATE OF JERUSALEM.

To the Editor of the "Quarterly Statement" of the Palestine Exploration Fund.

SIR,—Will you permit me to correct, in your next issue, two mistakes in the remarks upon the climate of Jerusalem, which were reprinted in your January number from the Journal of the Scottish Meteorological Society?

1. The rainfall for the season 1863-4 is given as 8·84 inches: it should be 19·175 inches. The error arose from the earliest returns to the Scottish Society having been from observations made with a pluviometer sent out by them, and which proved so ill-adapted for this country that its use was soon discontinued.

2. It is stated that "the sirocco occurred twice," implying that it occurred *only* twice. Some of us, whose lot it is to live in this country, would be only too happy if the sirocco were experienced not more than twice in three years and a half. The fact is, that at certain periods of the year it is one of our most frequent winds, being especially prevalent in the beginning of summer (May), and again in September, October, and November, just before the setting in of the rains. The trying weather, described in Mr. Buchan's paper as having prevailed during the epidemic of cholera in 1865, was due to sirocco.

A remarkable fact in connection with this wind, and one which goes far to account for its peculiarly depressing effect, is that it is *utterly destitute of ozone.* For many years I have been in the habit of experimenting upon it, and have always failed to obtain the slightest discoloration of the ozone paper when the sirocco was at all severe. At one time it occurred to me that the excessive dryness of the atmosphere might possibly prevent chemical action, but the result was the same when the paper was kept moist by allowing one end to remain in a cup of water.

Your obedient servant,

THOS. CHAPLIN, M.D.